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Accession #: D196022524

Document #: SD-W058-QAPP-001

Title/Desc:

PROJECT SPECIFIC QA PLAN PROJECT W-058 REPLACEMENT  
CROSS SITE TRANSFER SYSTEM

Pages: 16

## ENGINEERING CHANGE NOTICE

Page 1 of 2

1. ECN 162633

Proj.  
ECN NA

2. ECN Category (mark one)  Supplemental <input type="checkbox"/> Direct Revision <input checked="" type="checkbox"/> Change ECN <input type="checkbox"/> Temporary <input type="checkbox"/> Standby <input type="checkbox"/> Supersedure <input type="checkbox"/> Cancel/Void <input type="checkbox"/>	3. Originator's Name, Organization, MSIN, and Telephone No. L.R. Hall/38900/B4-08/372-0583  5. Project Title/No./Work Order No. Replacement Cross-Site Transfer System/W058  8. Document Numbers Changed by this ECN (includes sheet no. and rev.) WHC-SD-W058-QAPP-001 Rev. 2	3a. USQ Required? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No  6. Bldg./Sys./Fac. No. N/A  9. Related ECN No(s). N/A	4. Date 1/15/96  7. Approval Designator SQ  10. Related PO No. N/A
11a. Modification Work  <input type="checkbox"/> Yes (fill out Blk. 11b) <input checked="" type="checkbox"/> No (NA Blks. 11b, 11c, 11d)	11b. Work Package No. N/A	11c. Modification Work Complete  N/A  Cog. Engineer Signature & Date	11d. Restored to Original Condition (Temp. or Standby ECN only) N/A  Cog. Engineer Signature & Date
12. Description of Change The RCSTS Quality Assurance Plan is being updated in support of detailed design and construction.			
13a. Justification (mark one) Criteria Change <input type="checkbox"/> Design Improvement <input type="checkbox"/> Environmental <input type="checkbox"/> Facility Deactivation <input type="checkbox"/> As-Found <input type="checkbox"/> Facilitate Const <input checked="" type="checkbox"/> Const. Error/Omission <input type="checkbox"/> Design Error/Omission <input type="checkbox"/>  13b. Justification Details Update of the QAPP for detailed design completion and start of construction based on the completion and approval of the PSAR.			
14. Distribution (include name, MSIN, and no. of copies) See attached.			



## ENGINEERING CHANGE NOTICE

Page 2 of 2

1. ECN (use no. from pg. 1)

162633

## 15. Design Verification Required

☐ Yes☒ No

## 16. Cost Impact

## ENGINEERING

Additional

☐

\$N/A

Additional

☐

\$N/A

Savings

☐

\$N/A

Savings

☐

\$N/A

## 17. Schedule Impact (days)

Improvement

☐

N/A

Delay

☐

N/A

18. Change Impact Review: Indicate the related documents (other than the engineering documents identified on Side 1) that will be affected by the change described in Block 12. Enter the affected document number in Block 19.

SDD/DD	<input type="checkbox"/>	Seismic/Stress Analysis	<input type="checkbox"/>	Tank Calibration Manual	<input checked="" type="checkbox"/>
Functional Design Criteria	<input type="checkbox"/>	Stress/Design Report	<input type="checkbox"/>	Health Physics Procedure	<input type="checkbox"/>
Operating Specification	<input type="checkbox"/>	Interface Control Drawing	<input type="checkbox"/>	Spares Multiple Unit Listing	<input type="checkbox"/>
Criticality Specification	<input type="checkbox"/>	Calibration Procedure	<input type="checkbox"/>	Test Procedures/Specification	<input type="checkbox"/>
Conceptual Design Report	<input type="checkbox"/>	Installation Procedure	<input type="checkbox"/>	Component Index	<input type="checkbox"/>
Equipment Spec.	<input type="checkbox"/>	Maintenance Procedure	<input type="checkbox"/>	ASME Coded Item	<input type="checkbox"/>
Const. Spec.	<input type="checkbox"/>	Engineering Procedure	<input type="checkbox"/>	Human Factor Consideration	<input type="checkbox"/>
Procurement Spec.	<input type="checkbox"/>	Operating Instruction	<input type="checkbox"/>	Computer Software	<input type="checkbox"/>
Vendor Information	<input type="checkbox"/>	Operating Procedure	<input type="checkbox"/>	Electric Circuit Schedule	<input type="checkbox"/>
OM Manual	<input type="checkbox"/>	Operational Safety Requirement	<input type="checkbox"/>	ICRS Procedure	<input type="checkbox"/>
FSAR/SAR	<input type="checkbox"/>	IEFD Drawing	<input type="checkbox"/>	Process Control Manual/Plan	<input type="checkbox"/>
Safety Equipment List	<input type="checkbox"/>	Cell Arrangement Drawing	<input type="checkbox"/>	Process Flow Chart	<input type="checkbox"/>
Radiation Work Permit	<input type="checkbox"/>	Essential Material Specification	<input type="checkbox"/>	Purchase Requisition	<input type="checkbox"/>
Environmental Impact Statement	<input type="checkbox"/>	Fac. Proc. Samp. Schedule	<input type="checkbox"/>	Tickler File	<input type="checkbox"/>
Environmental Report	<input type="checkbox"/>	Inspection Plan	<input type="checkbox"/>		<input type="checkbox"/>
Environmental Permit	<input type="checkbox"/>	Inventory Adjustment Request	<input type="checkbox"/>		<input type="checkbox"/>

19. Other Affected Documents: (NOTE: Documents listed below will not be revised by this ECN.) Signatures below indicate that the signing organization has been notified of other affected documents listed below.

Document Number/Revision

Document Number/Revision

Document Number/Revision

N/A

## 20. Approvals

Signature

Date

Signature

Date

## OPERATIONS AND ENGINEERING

Cog. Eng. C. Van Katwijk

Cog. Mgr. G.L. Parsons

QA J.A. Peltier

Safety H.L. Wedlick

Environ. N/A

Other N/A

## ARCHITECT-ENGINEER

PE

QA

Safety

Design

Environ.

Other

## DEPARTMENT OF ENERGY

Signature or a Control Number that tracks the Approval Signature

## ADDITIONAL

SEE DOE-RL LETTER # 96-TCR-011

# PROJECT SPECIFIC QUALITY ASSURANCE PLAN PROJECT W-058 REPLACEMENT CROSS-SITE TRANSFER SYSTEM

LANNY R. HALL

WHC, Richland, WA 99352

U.S. Department of Energy Contract DE-AC06-87RL10930

EDT/ECN: 162633

UC: 2030

Org Code: 38900

Charge Code: N58LH

B&R Code: 39EW31301

Total Pages: 11

Key Words: RCSTS, Quality Assurance Program Plan, W058,

Abstract: Project Specific Quality Assurance Program Plan for project W058, Replacement Cross-Site Transfer System Project.

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 2/5/96  
Release Approval Date



Approved for Public Release



PROJECT SPECIFIC QUALITY ASSURANCE PLAN

W-058

REPLACEMENT CROSS-SITE TRANSFER SYSTEM

Issued By:  
Westinghouse Hanford Company

JANUARY 3, 1996

Prepared By:

  
L.R. HALL  
Cognizant Quality Engineer

1/15/96  
Date

WHC Approvals:

  
J.A. PELTIER  
Quality Assurance Manager


1/15/96  
Date

 FOR CVR  
D. VAN KATWIJK  
Project Engineer

1-15-96  
Date

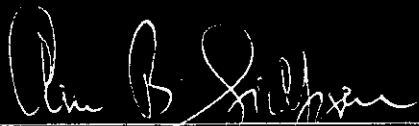
  
G.L. PARSONS  
Project Manager

1-15-96  
Date

  
H.L. WEDLICK  
Safety

1-15-96  
Date

U.S. Department of Energy Approval:

  
A.B. Sidpara, Director  
Tank Operations Division  
U.S. Department of Energy, Richland Operations Office

1/28/96

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## REPLACEMENT CROSS-SITE TRANSFER SYSTEM PROGRAM DESCRIPTION

This document and the Tank Waste Projects (TWP) Quality Assurance Program Plan (QAPP) WHC-SD-WM-QAPP-018 define the Quality Assurance (QA) Program for Project W-058. The purpose of this QA program is to control project activities in such a way as to achieve the project mission in a safe and reliable manner. The QA program for the project is implemented through the use of ASME NQA-1, *Quality Assurance Program Requirements for Nuclear Facilities* (ASME 1994).

This document and the Tank Waste Projects QAPP describe the program and the planned actions which Westinghouse Hanford Company (WHC) will implement to demonstrate and ensure that the project meets the requirements of Title 10, Code of Federal Regulations, Part 830.120 (10 CFR 830.120), *Quality Assurance*, through the interpretive guidance of ASME NQA-1.

The Project Participants are responsible for a QA program covering the quality requirements applicable to their assigned tasks and for work performed by others in support of those tasks. The W058 Project QA program, which controls all participant QA programs, is described in this Replacement Cross-Site Transfer System (RCSTS) QAPP and TWP QAPP, and is passed on selectively through the design documents. The W058 Project QA program and the participant QA plans and implementing procedures collectively control the total W058 Project QA program.

The Project organizational relationships are defined in Figure 1-1. Each of the participating organizational responsibilities as shown in Figure 1-1 has an assigned individual responsible for the quality activities described by the Statement of Work (SOW), Contract, Letter of Instruction (LOI), or work order for that participant. The cognizant quality engineer(s) report to management within their respective organizations, ensuring independence from cost and schedule considerations, and providing direct communications channels with appropriate levels of management.

The inspection criteria for system, components and structures identified on the project critical characteristics sheets (Attachment I) are based on the attributes assigned in the Preliminary Safety Analysis Report WHC-SD-W058-PSAR-001, safety class designations. Any discrepancies or additional information required of this document regarding safety class designations will be deferred to the PSAR.



# Replacement Cross-Site Transfer System Project Organization

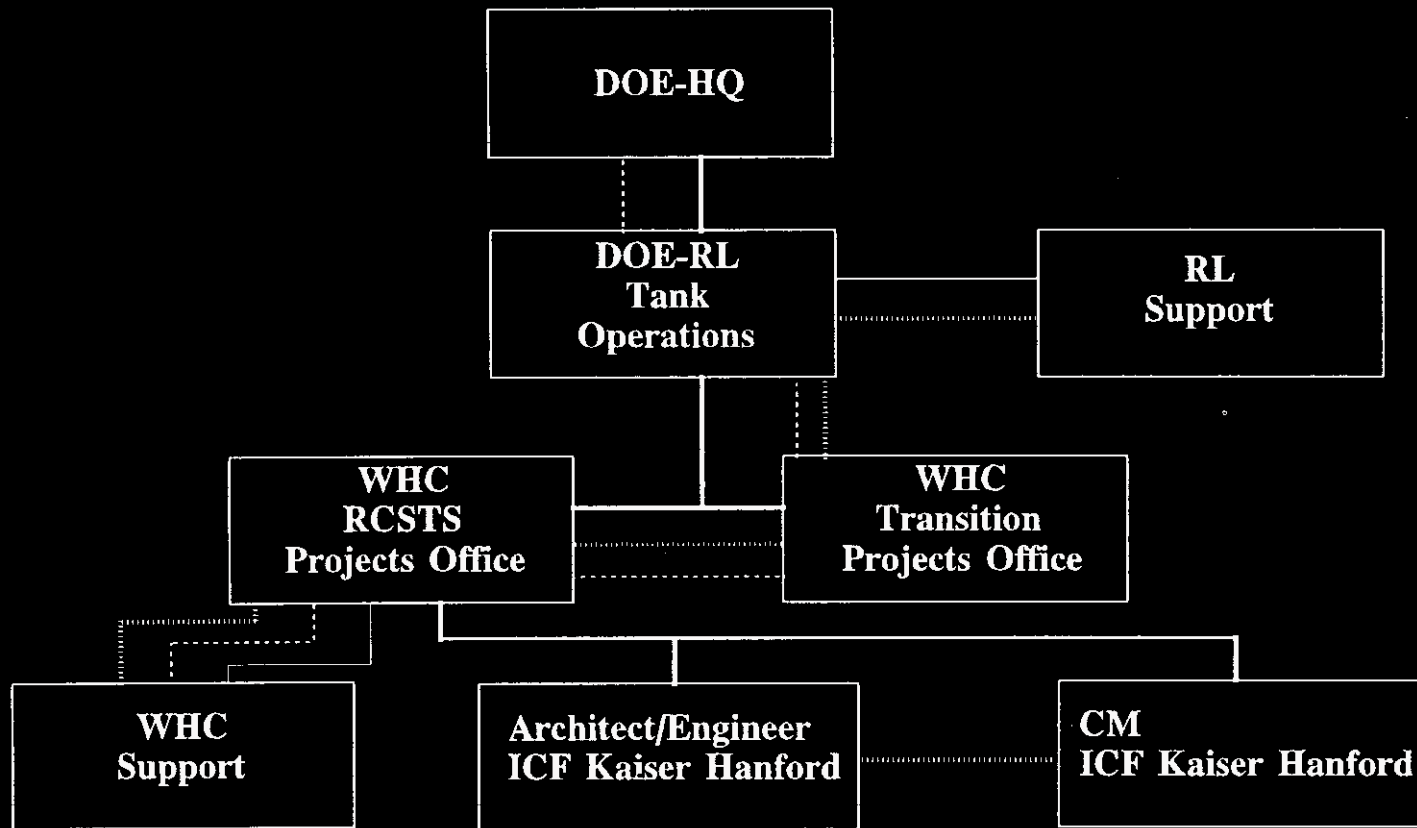


FIGURE 1-1

<hr/>	Line Management	CM	Construction Management
<hr/>	Program & Matrix Support	DOE-HQ	U.S. Department of Energy - Headquarters
<hr/>	Program Guidance	RCSTS	Replacement Cross-Site Transfer System
<hr/>	Project Direction & Reporting	RL	U.S. Department of Energy, Richland Operations Office
		WHC	Westinghouse Hanford Company

## OBJECTIVES

Radioactive slurry and supernatant waste (mixed liquid waste) has been transferred between the 200 West and 200 East Areas for approximately 40 years. The existing cross-site transfer system configuration is a composite of various projects which have been designed, constructed and operated over the last 40 years. The existing transfer system does not comply with the latest U. S. Department of Energy (DOE) and other Federal and State standards. Certain segments have exceeded, or are nearing the end of their useful life.

The purpose of Project W058, Replacement Cross-Site Transfer System (RCSTS), is to replace the existing cross-site transfer system. The RCSTS will provide the capability for transferring waste in support of the Hanford Site clean-up mission. This project will provide the necessary upgraded transfer system to support future pretreatment and disposal facilities. The project is required to provide compliant lines, system reliability, and pipeline capacity to meet future waste transfer projections. These transfers will be made from 200 East and 200 West tank farm facilities to the treatment, storage, and disposal facilities in the 200 East Area.

The new system will consist of a pipe-in-pipe connecting the 241-SY A and B valve pits in the 200 West Area with the 244-A Lift Station in the 200 East Area. The scope of work to be accomplished by Project W-058 and covered by this Quality Assurance Plan includes the following:

- \* Design and construct one diversion box and one vent station.
- \* Provide the necessary excavation and backfill for diversion box, vent station, and piping.
- \* Design and provide a booster pump in the diversion box.
- \* Design and construct a backup system to flush the pipeline from an independent water source to preclude plugging. The system will be capable of supplying water to the suction side of the booster pump.
- \* Design and provide instrumentation and controls for transfer operation, control, and monitoring.
- \* Design and construct the new waste transfer lines, encasement, drain and vent lines.
- \* Design and construct electrical power lines in support of the instrumentation and pumping system.

## PROJECT CRITICAL CHARACTERISTICS

Safety classifications of systems, components, and structures shall be used as the basis for Quality Assurance Program Requirements (Reference WHC-CM-4-46). The project critical characteristics (Attachment I) denote the inspection criteria for systems, components, and/or structures relevant to this project scope, based upon the PSAR.

## REFERENCES

WHC *Tank Waste Projects Quality Assurance Program Plan*, WHC-SD-WM-QAPP-018.

WHC *Functional Design Criteria*, (FDC) WHC-SD-W058-FDC-001, Replacement of the Cross-Site Transfer System.

WHC *Preliminary Safety Analysis Report*, (PSAR), WHC-SD-W058-PSAR-001, for Replacement of the Cross-Site Transfer System.

WHC *Safety Analysis Manual*, WHC-CM-4-46.

## ATTACHMENT I

PROJECT CRITICAL CHARACTERISTICS						
Item	Description of Systems, Components, and Structures	Safety**	Type of Inspection*			Comments
			F	G	D	
●	DIVERSION BOX AND VENT STATION	-	-	-	-	
1.	Diversion box and vent station structure	**			X	Designed to resist a Safety Class 1 seismic event and retain their safety function of containing spray and pool leaks.
2.	Pit leak detector	**			X	Detection of a leak is required to result in the shutdown of the transfer and booster pumps.
3.	Pit entry door	**			X	Air confinement such that approximately 90% of the air passing out of the pit preferentially goes through the inlet air HEPA filter when the door is closed and penetrations are sealed.
4.	Inlet air HEPA filter system	**			X	This is all of the components of the inlet air HEPA filter system, including the filter, housing, and piping.
5.	Emergency pumpout line	**			X	Line shall be sealed before a transfer.
6.	Air sample line	**			X	Line shall be sealed before a transfer.
7.	Exhauster hookup	**			X	Line shall be sealed before a transfer. Provides the S.C.3 function of mitigating airborne exposure to maintenance workers
8.	Liner washdown system	**			X	Line shall be sealed before a transfer. Provides the S.C.3 function of mitigating exposure to maintenance workers.
9.	Shield floor	**		X		Provides shielding protection for facility workers

PROJECT CRITICAL CHARACTERISTICS						
Item	Description of Systems, Components, and Structures	Safety**	Type of Inspection*			Comments
			F	G	D	
10.	Pit access corridor	**		X	X	Must be designed to withstand a S.C.1 seismic event but will otherwise meet S.C.3 requirements.
11.	Primary piping/valves within the pit	**		X	X	The pit primary piping will be designed to withstand a S.C.1 seismic event but will otherwise meet S.C.3 requirements.
●	BURIED WASTE TRANSFER PIPING SYSTEM	-	-	-	-	
1.	Primary transfer piping (inner)	**	X		X	The buried primary and encasement piping must be designed to resist a S.C.1 seismic event and retain their safety function of containing the waste. In all other respects the primary piping and encasement piping shall meet S.C.2 requirements for containment of the waste.
2.	Secondary piping (encasement)	**	X		X	
3.	Pressure relief valve (at 244-A lift station)	**	X		X	Provided to preclude over-pressurization of the existing 200 East Area transfer piping system.
4.	Rupture disk (at 244-A lift station)	**			X	The rupture disk must burst to allow the pressure relief valve to provide its safety function of maintaining downstream pressures at acceptable levels.
5.	Annulus leak detection	**	X	X		
6.	Excavation Program	**			X	An existing excavation permit program is in place. Physical and/or administrative barriers may be required to prevent the excavation of the transfer piping.
7.	Encasement rupture disks	**			X	Required to limit the amount of waste that can escape through the encasement to the environment during the corrosion accident scenario discussed in the PSAR.

PROJECT CRITICAL CHARACTERISTICS						
Item	Description of Systems, Components, and Structures	Safety**	Type of Inspection*			Comments
			F	G	D	
●	BACKUP FLUSH SYSTEM	-	-	-	-	
1.	Isolation valve(s), flange(s), etc.	**			X	Final design of this system has not been chosen. Isolation elements (i.e. manually operated valves, pneumatic valves, check valves, blind flanges) would be designated S.C.1 for the purpose of isolating the waste system from the flush system.
2.	Enclosure(s) for isolation components	**			X	The enclosure(s) would be designated S.C.1 to prevent a direct spray from reaching the environment.

\* See attachment II for the definitions on types of inspections.

\*\* Safety classifications will be identified and be consistent with the requirements of WHC-CM-4-46. Refer to the PSAR for Safety class designations as they relate to major systems, components and structures.

## ATTACHMENT II

## INSPECTION DEFINITIONS

Types of Inspection. Due to the variety of types of contracts and subcontracts and the degree of responsibility assigned to the operating contractors, the architect-engineer, the construction contractors, and individual vendors; specific inspection responsibilities are not be prescribed in this plan (specifics will be defined within the construction and procurement specifications). In general, inspection activities are divided into three types: functional, general, and detailed.

1. Functional Inspection (F). Performed to determine overall compliance with contract drawings and specifications. Functional Inspection may vary from inspection of minor items to extensive testing of operating equipment (which must be provided for in contract). It may also serve in making initial determination of the adequacy of the design effort. The field element and the operating contractor participate in functional inspections from the viewpoints of owner and user.
2. General Inspection (G). The fundamental and comprehensive inspection to ascertain that workmanship and the kind and quality of materials conform to the contract specifications.
3. Detailed Inspection (D). Includes, but is not limited to, verification of details, such as checking location and size of reinforcing bars, maintaining records of concrete batch plant operations, verifying the use of proper welding rods, checking riveting and welding, and performing other inspection for quality assurance purposes.

# DISTRIBUTION SHEET

To	From	Page 1 of 1
Distribution	L.R. Hall	Date 2/1/96
Project Title/Work Order		EDT No. NA
Project W058, "Replacement Cross-Site Transfer System", Project Specific Quality Assurance Plan		ECN No. 162633

Name	MSIN	Text With All Attach.	Text Only	Attach./Appendix Only	EDT/ECN Only
Central Files	<i>A3-86 original</i> <del>L8-04</del>	X			
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R.L. Brown	B4-08	X			
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Project Files	<i>G3-11</i> <del>L8-04</del>	X			
Project Database	H5-26	X			